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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/730,507	12/08/2003	Edward M. Kent	140/41339/996	2339
279 7590 10/02/2007 Trexler, Bushnell, Giangiorgi, Blackstone & Marr, Ltd. 105 West Adams Street Suite 3600 Chicago, IL 60603			EXAMINER BEMBEN, RICHARD M	
			ART UNIT 2622	PAPER NUMBER
			MAIL DATE 10/02/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/730,507

Applicant(s)

KENT ET AL.

Examiner

Richard M. Bemben

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 2/10/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. Figures 2 and 3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 1, 6-10, 12 and 16-19 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,631,976 issued to Bolle et al., hereinafter "Bolle".**

[Claim 1] Bolle discloses a system for capturing high-speed motion (c. 4, ll. 25-29), said system comprising:

a video camera (c. 3, ll. 53-63; Fig. 1, "110");

an infrared strobe light (c. 3, l. 64 – c. 4, l. 11; Fig. 1, "120");

a circuit connected to said video camera and said infrared strobe light,
said circuit configured to fire said infrared strobe light as a result of receiving a
signal from said video camera (c. 4, ll. 12-22; Fig. 1, "125").

[Claim 6] Bolle further discloses a video recorder connected to said video
camera (c. 3, ll. 30-42; Fig. 1, "142").

[Claim 7] Bolle further discloses that the video recorder comprises a video
cassette recorder (c. 5, l. 41; "video tape").

[Claim 8] Bolle further discloses that the video recorder has the ability to play
back in a single frame mode (c. 5, ll. 58-62).

[Claim 9] Bolle further discloses a monitor connected to said video recorder (c.
5, ll. 52-55; Fig. 1, "150").

[Claim 10] Bolle further discloses that said circuit is configured to extract a
vertical synchronization pulse from the signal received from said video camera and use
said vertical synchronization pulse to provide a triggering signal to said infrared strobe
light (c. 4, ll. 12-22).

Claim 12 is a method claim corresponding to apparatus claim 1. Therefore,
claim 12 is analyzed and rejected as previously mentioned with respect to claim 1.
Further, it is inherent that power is supplied to the system.

Claims 16, 17, 18 and 19 are method claims corresponding to apparatus claims
6, 7, 9 and 10, respectively. Therefore, claims 16, 17, 18 and 19 are analyzed and
rejected as previously discussed with respect to claims 6, 7, 9 and 10, respectively.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 2, 3, 11, 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bolle in view of "Video Sync Separator for Your Oscilloscope" by Steve Pence.**

[Claim 2] Bolle discloses a system for capturing high-speed motion (refer to the rejection of claim 1). Bolle further discloses a circuit that extracts a vertical synchronization pulse from the signal received from the video camera and uses said vertical synchronization pulse to provide a triggering signal to the infrared strobe (refer to the rejection of claim 10). However, Bolle does not disclose that circuit is configured to fire said infrared strobe light as a result of receiving said signal from said video camera, after a delay period.

Pence discloses a circuit for extracting a vertical synchronization pulse from the signal received from the video signal and using the vertical synchronization pulse to provide a triggering signal, wherein the trigger pulse may be applied after a user settable delay period (pp. 1-3; Figs. 1 & 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to apply the trigger pulse after a delay as disclosed by Pence in the system disclosed by Bolle in order to be able to the captured images in great detail, as disclosed by Pence, p. 1.

[Claim 3] Refer to the rejection of claim 2.

Claims 13 and 14 are method claims corresponding to apparatus claims 2 and 3, respectively. Therefore, claims 13 and 14 are analyzed and rejected as previously discussed with respect to claims 2 and 3, respectively.

[Claim 11] Bolle discloses a system for capturing high-speed motion (refer to the rejection of claim 1). Bolle further discloses a circuit that extracts a vertical synchronization pulse from the signal received from the video camera and uses said vertical synchronization pulse to provide a triggering signal to the infrared strobe (refer to the rejection of claim 10). However, Bolle does not disclose said circuit comprises a video input, a buffer phase shifter circuit connected to said video input, a clamp circuit connected to said buffer phase shifter circuit, a synchronization separator connected to said clamp circuit, a vertical pulse separator connected to said synchronization separator, a variable delay single shot circuit connected to said vertical pulse separator, a variable pulse width single shot circuit connected to said variable delay single shot circuit, and a trigger output connected to said variable pulse width single shot circuit.

Pence discloses a circuit for extracting a vertical synchronization pulse from the signal received from the video signal and using the vertical synchronization pulse to provide a triggering signal comprising a video input, a buffer phase shifter circuit connected to said video input, a clamp circuit connected to said buffer phase shifter circuit, a synchronization separator connected to said clamp circuit, a vertical pulse separator connected to said synchronization separator, a variable delay single shot circuit connected to said vertical pulse separator, a variable pulse width single shot

circuit connected to said variable delay single shot circuit, and a trigger output connected to said variable pulse width single shot circuit (pp. 1-3; Figs. 1 & 2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that the circuit comprise the mentioned components as disclosed by Pence in the system disclosed by Bolle in order to provide a trigger signal to a display or other device from a video input, which is notoriously well known in the art.

6. Claims 4 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bolle.

[Claim 4] Bolle discloses an infrared video camera. However, Bolle does not expressly state that an infrared bandpass filter over a lens is used to capture only infrared radiation. Official notice is taken that it is notoriously well known in the art to use an infrared bandpass filter over a lens of a video camera in order to use a standard video camera to capture only infrared radiation.

Claim 15 is a method claim corresponding to apparatus claim 4. Therefore, claim 15 is analyzed and rejected as previously mentioned with respect to claim 4.

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bolle in view of U.S. Patent No. 6,618,123 issued to Uomori et al., hereinafter "Uomori".

[Claim 5] Bolle discloses a system for capturing high-speed motion comprising a video camera and an infrared strobe light (refer to the rejection of claim 1). Boll further discloses that the infrared strobe light can be "any electromagnetic energy source" (c. 3,

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I. 64). However, Bolle does not expressly disclose that the infrared strobe light comprises a LED strobe.

Uomori discloses a system comprising a video camera and an infrared strobe light comprising a LED strobe (c. 5, I. 65 – c. 6, I. 9; Figs. 1 & 2). Therefore, it would have been obvious to use a LED as disclosed by Uomori in the infrared strobe light disclosed by Bolle because LEDs are well known, cost-effective, highly-efficient light sources.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following disclose systems and methods for capturing image data using a strobe device that is triggered by the vertical sync signal of the imager:

Dykeman et al.	US 3,111,555
Fletcher et al.	US 3,778,786
Holm et al.	US 4,044,227
Pajunen	US 4,918,522
Quine	US 2005/0046694

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard M. Bemben whose telephone number is (571) 272-7634. The examiner can normally be reached on 8:30AM-5:00PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lin Ye can be reached on (571) 272-7372. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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LIN YE
SUPERVISORY PATENT EXAMINER